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AMIGA CD!

CD Tips

All you need to know to get the best from your machine

Commodores Dynamic Total Vision!

the Top Ten of Amiga CD Software

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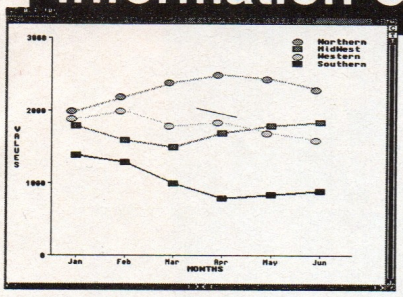
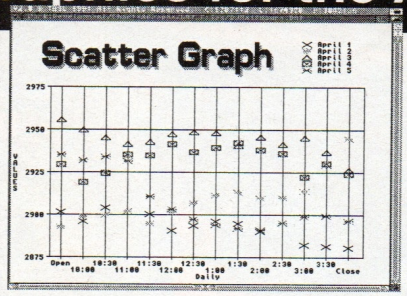
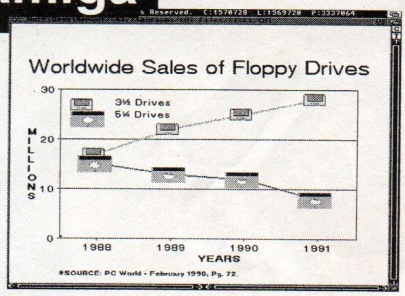
+ Defender Of The Crown II Reviewed + Meet Carl Sassenrath - Amiga CD genius!

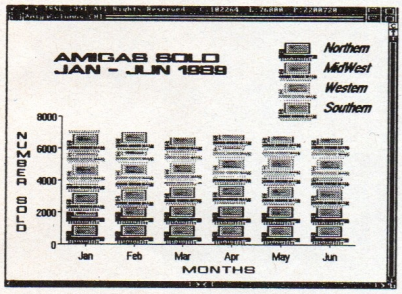
Charts&Graphs

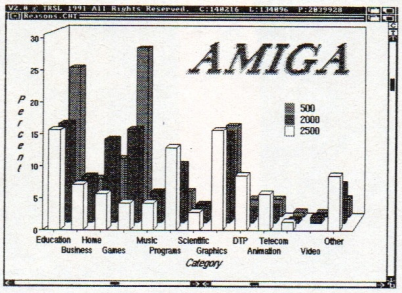
Information Graphics for the Amiga

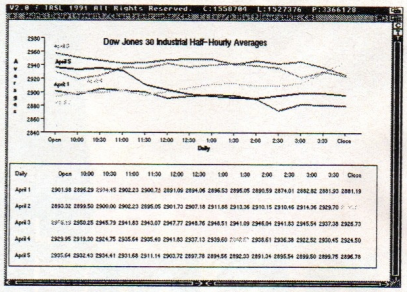


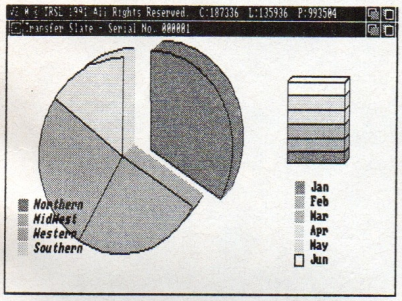


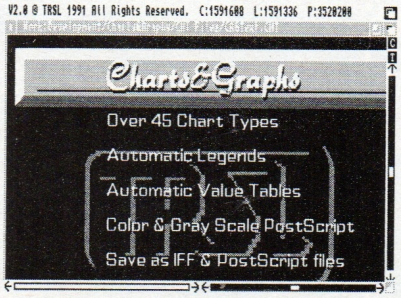


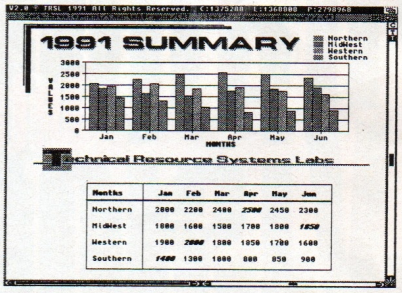


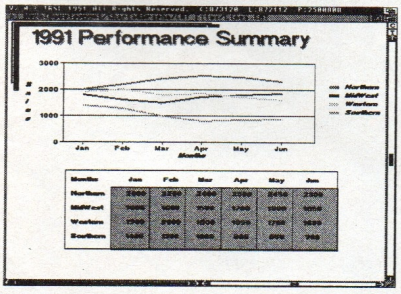


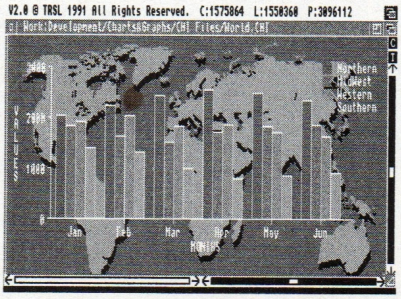


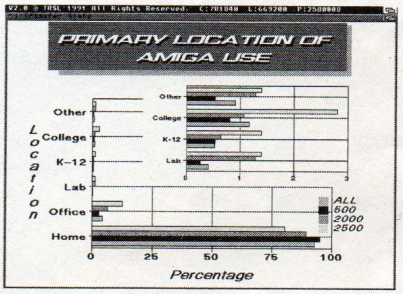


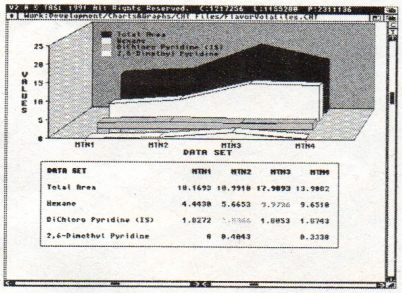


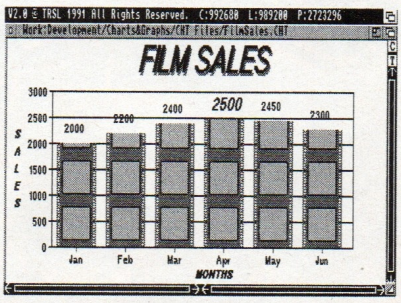


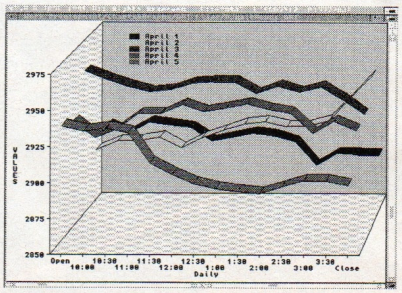












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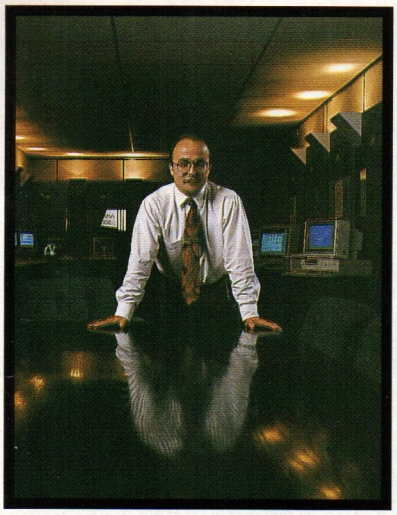
Dear Reader, welcome to

amiga CD!

and more importantly Amiga CDTV...



As managing director of Commodore I'm often asked why is CD so important, not just to us but to everyone involved in this industry.

That's not an easy question to answer, because it depends on who is asking the question. For anyone using home computers, the change to CD-ROM is as significant as moving from radio to television. Because CD-technology redefines the use of and access to information.

In size terms alone, take the Fred Fish collection of software - volume 1 to 680. To own that collection on floppy disks would cost about £1000. With CDTV the entire collection all 644Mb - on a CD disk costs just £19.95!

But that is only the start of how CD technology is going to change domestic technology. Consider the software publisher's perspective. In spite of the phenomenal success these companies have had with the Amiga, they face two major drawbacks - and these are both linked to the use of floppy disk.

First is the problem of size, producing games on a single disk is rare nowadays, because to make better products, more and more information is required. For publishers CD removes this constraint at a stroke.

Piracy is the other major problem which is costing our industry millions of pounds per year. Again CD technology solves this problem. True CD products are simply far too large to copy.

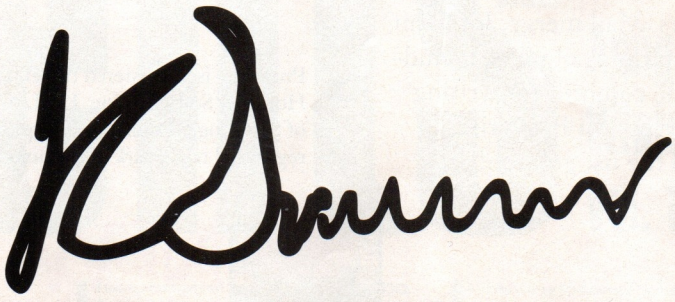
For Amiga CDTV owners this will mean products both for pure unadulterated entertainment and education that are infinitely better and no more expensive than Amiga products today.

Already publishers are producing titles which would be impossible with any other technology than CD. In leisure we have Sherlock Holmes and CDTV Sports Football which show the power of motion video in use. In Education virtually all the talking books and encyclopedias could only ever be produced on CD technology courtesy of its immense storage capability.

The next revolution in CD technology is happening now as the cream of Europe's software industry is coming to terms with the challenge of designing products to fit the CD format as opposed to floppy disks. Microcosm is one such product being developed now for release early in 1993. I am totally confident that Microcosm will be received even more positively than the first pioneering 16-bit titles were on the Amiga.

Your investment in Amiga CDTV is an investment in the future, and that future starts now.

Yours sincerely



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MANAGING DIRECTOR

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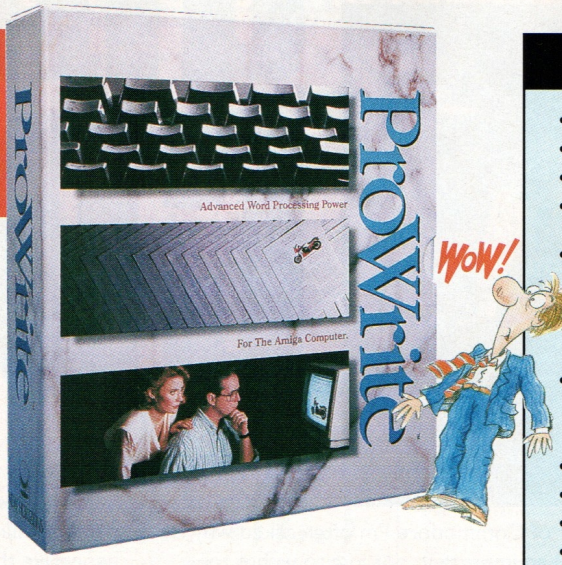

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- Multiple fonts, sizes, styles, and colors.
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AMIGA CD!

3 KELLY SUMNER

Commodore UK's Managing Director welcomes you to the new technology and to AMIGA CD!

6 THE TOTAL VISION

the news update of what's happening on the Amiga CD scene.

8 THE TOP TEN

Reviewer Janet Bickerstaff checks through her disc-based memory to find the ten stars of Amiga CD software.

12 GAMETIME

The first AMIGA CD! Platinum Award for an outstanding program goes to Defender of the Crown II, a classic game in its first version has now got even better.

15 IN THE CADDY

A mini guide to what you might or might not buy. Rico Gusman and the AMIGA CD! team have picked a dozen of the growing number of programs that are available now on Amiga CD.

18 CD TIPS

Your Amiga CD will give you bags of flavour if you follow this list of do's and don'ts from Gary Fenton.

+ special Amiga CD! Supplement

The Definitive guide to Amiga CD Software. 16 Pages of all the programs on Amiga CD.

22 PRESSING THE PLASTIC

How do all those stunning graphics, moving pictures and HiFi quality sound get on to the grooves of a simple CD disc? Dr Mike Nelson explains.

24 THE AMIGA CD! USERS CLUB

If you have an Amiga CD, you will want to find out how to get the best out of it. The first AMIGA CD! Users Club in the world will help you use it for pleasure and profit.

26 A MAN WITH A DREAM

Carl Sassenrath is one of the computing world's most brilliant innovators. He tells Mike Nelson how he came to be involved with the creation of the Amiga and CDTV.

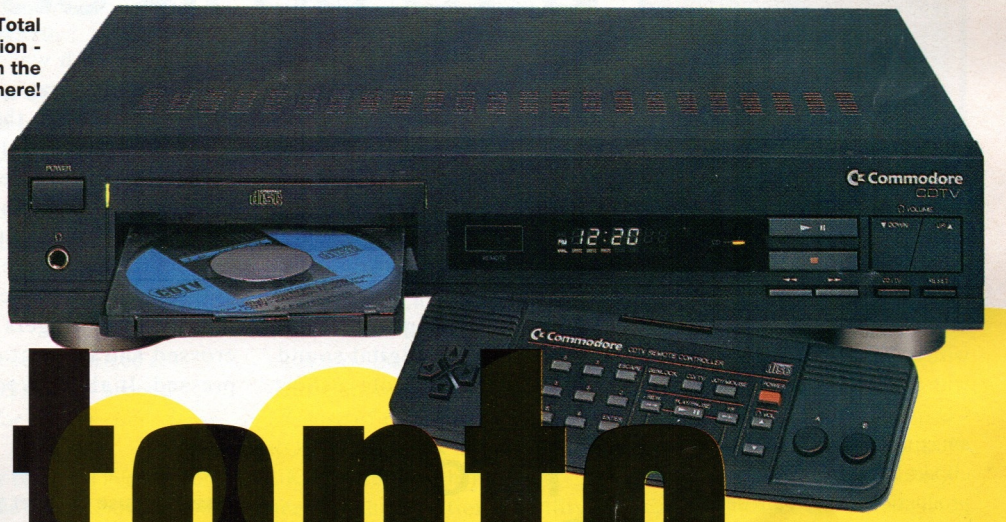
28 EXPANDING THE HORIZON

You can make your Amiga CD do far more than you might imagine. Gary Fenton tells you what you can add on, from hard disks to the cute little Brickette.

30 COMPETITION

You can win all 23 titles of the software reviewed in this issue of Amiga CD!

Commodore Total Dynamic Vision - Multimedia in the home is here!



contents

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compiled and edited by Janet Bickerstaff and Anthony Mael

Virgin Music

Musicolor from Virgin Games should be on sale by the end of 1992. Based on the music teaching method of Candida Tobin, Musicolor has already been a success in trials in selected schools. An early version was demonstrated at shows over a year ago but, because it is such a complex multi-layered program, the final version has taken months to complete.

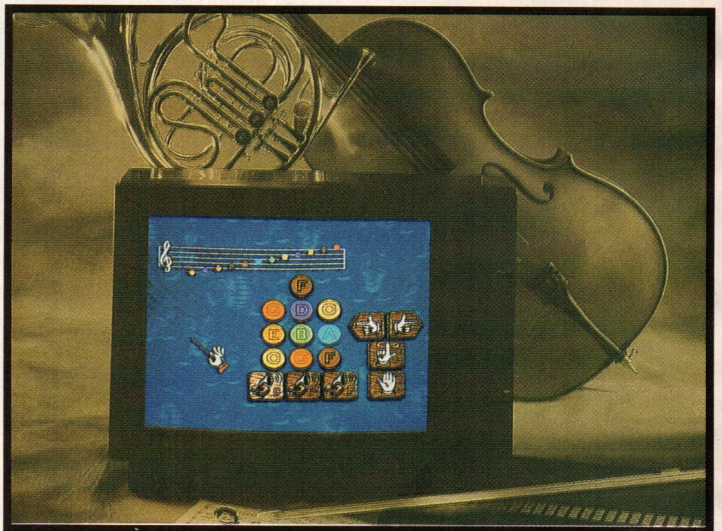
For the RRP of £49.99 you will get two discs and an information booklet, composition work sheets, a colouring-book to learn the notes (which are represented by colours in this system), a chord ruler and a notation strip. There are 15 lessons with exciting looking graphics, plus two sets of aural tests, teaching the theory of music as you learn to compose and play your own music.

We should be able to carry a full review in the next issue of AMIGA CD!

Details from Virgin Games on 081 960 2255.

Winner of EMMA Award

Musicolor won the European MultiMedia Award for the Best Educational Application. The awards were presented at a gala dinner at the Cumberland Hotel, London, on the opening day of the recent TIME (The International Multimedia Event) Europe Show at Wembley.



Become Beethoven in a day with Musicolor.

Pandora's CD, clipart for everyone.

Pandora's CD

There is something for everyone with a CDTV, or an Amiga 500 with an A570 drive, in Pandora's CD from Optonica. It contains an amazing 2,000, full colour, Amiga clipart library to use in your own productions. There are demos showing the use of multimedia and CDTV in various market areas including point of sale, and education and training, plus a copyright free photo/textures/sample library. Also on the disc is a sample from Insight Technology, a CDTV title produced by Optonica for Commodore/CDTV Publications. There is even a CDXL video version of Commodore's CDTV demo tape. All this for the unbelievable RRP of £4.99.

Ring Optonica on 0455 558282 for details

Ø TO CD IN 60 MINUTES

As the finale to the recent Commodore Developers' Conference at Buxton, developer, Jim Hawkins, fulfilled a challenge to cut a CDTV disc from scratch in just one hour - a feat thought to be impossible until now.

Using his Amiga 3000 with a Sunrize 16bit digital sound board, Jim first wrote a short program, which was then stored on his Quantum hard disk together with the CDTV trade mark (essential for any authentic CDTV title). Jim went through his check list. A gold disc - a "master" - costing £22 was carefully unwrapped and placed in a CD encoder. Fingers were crossed and the button was pressed. It all worked. The disc was cut and played back with a minute to spare.

The encoder costs £4750 (+VAT) and will enable many developers to prepare their gold discs for pressing at a reasonable price.

Details from Clarinet Systems Ltd of Camberley on 0276 600398.

Hard Driving

If you want to make a jump into the realms of mass storage that's not CD, you add a hard drive to your CDTV. Hard drives are in general faster than CD drives though only the very big professional level ones can even come near the 600 megabytes plus that a single CD disc contains. However, for storing personal data and computer programs, they have some distinct advantages - not least because they let you "write" information to them.

You can, if you are technical enough fit a hard drive internally for a CDTV. But not too many people would want to try that without the close cooperation of a dealer.

However, there is now on the market a hard drive that stands outside the CDTV. This external drive will obviously be of interest to those making professional use of Amiga CD technology - an increasing number.

The hard drive consists of a SCSI - small computer systems interface - controller, a black CDTV matching box containing the drive and a power supply and through port. A data cable is also included.

The hard drive is designed as a user upgrade and so does not affect the warranty of the CDTV. The price for the external hard drive is £349.99. Details from 0543 251275 though you would be best advised by your local dealer on fitting an internal drive.

The DEMO Collection

PD on CD for less than 3p per program.

An excellent bargain from Almathera, The Demo Collection has a RRP of £19.99. This disc is crammed full with over 12,000 files - 600MB of PD software - that is nearly 700 floppy disks on one CD. It is worth buying a CDTV or an A570 CD ROM drive for your A500 just to get the PD! With this disc you can create your own music with Protracker - over 4000 samples and 1000 tunes are supplied. There are 200 demos, so you can try out commercial software before you buy it.

There are 32MB of clipart, which is particularly suited to PageStream, the DTP program. You can use the fonts and images in your own graphics and DTP. It is compatible with Workbench 1.3 and 2.0. Coming soon from Almathera is CDPD 2, a follow-up to their CDPD disc which is currently bundled with the A570.

Full review of The Demo Collection in the next issue of AMIGA CD!

Details from Almathera Systems on 081 683 6418

Full motion video

At the TIME Interactive Multimedia Show details were announced of the JPEG Video Encoder software, and also a decoder chip for CD ROM applications. C-Cube Microsystems' software, dubbed MPEGtool, will allow developers to create full-motion video for CDs, digital television research and cable advertisements which means that movies and other video-style material can be run on CDTV discs. Don't get too excited though, a Sun SPARC workstation will be required to run MPEGtool, and the encoder is priced at weighty US$35,000 - around £20,000 - for a single-user license.

Preliminary technical information was available at the Show on the SGS-Thomson Microelectronics' MPEG/H.261 Video Decoder. However, it will be a while yet before full motion video is obtainable on a CDTV title.Though as we are seeing more and titles are coming out with at least a quarter of the screen buzzing with movie-style action If you are hot to get into the CD movie business have twenty grand or so to spare you can get details of MPEGtool from C-Cube Microsystems 0734 351010 and the MPEG/H.261 Video Decoder from Polar Electronics 0525 377093

COMING SOON

Soon to be released in the UK is "The Brickette" - an exceptionally useful add-on for the CDTV. The Brickette is a cable with a remote control plug on one end and a dual joystick/mouse connector on the other. The CDTV Trackball which has previously been required t o allow a joystick to be used with the CDTV, with its two joystick ports, was nicknamed "The Brick", hence the name "Brickette".

With the Brickette you will be able to plug a mouse and a joystick into the CDTV. It will certainly be a considerable pleasure to all those who are going to play the multiplicity of games that are likely to be hitting the Amiga CD scene in the not too distant future.

The Brickette is said to be going to cost £29.99 - a small investment for a big improvement.

Philips press CDTV discs

PDO Discs Ltd, owned by Philips, the manufacturers of the rival CDI system, are pressing CDTV discs at their factory in Blackburn. They are offering a full mastering, replicating and packaging service. The master disc, cut from your own gold disc, costs around £1 ,000 and the approximate charge for a run of 10,000 discs is £1.20 each. Up until now this work was done at their Hannover factory but, because of the demand for CD ROM discs, especially in the UK and Ireland, there was a need for this additional facility.

Details from PDO Discs 081 948 7368 or 0254 52448

PDO Disks Ltd. factory at Blackburn.

Healthy interest

Your Amiga CD may offer you more than you thought... You now have access to a far more sources of information than simply those come on CDTV discs. Just as you can play audio discs you can also run CD ROM discs if they conform to the international ISO 9660 standard. That means that for example a recent CD-ROM disc put out by the Health and Safety Executive. OSH-UK - Occupational Safety and Health - United Kingdom includes the full text of 400 pieces of UK health and safety legislation; over 1300 health and safety reports, guidance and advisory documents and some 1,000 abstracts of British Standard specifications relevant to health and safety at work.

Of course, the information is designed for companies rather than individuals but it just shows what a new world that Amiga CD can open to anybody. Well, anybody who wants to spend the £595 the OSH-UK disc costs...

the top ten

Janet Bickerstaff who has been reviewing CDTV titles since they first began appearing has selected her personal list of the Top Ten titles.

It has been really difficult to narrow the choice down to ten. Out of the list of Top Ten which appeared in the May 1992 issue of Amiga User International I would have liked to keep Learn French with Asterix and Japan World. However, I have made my selection to include a title from each of the six categories...

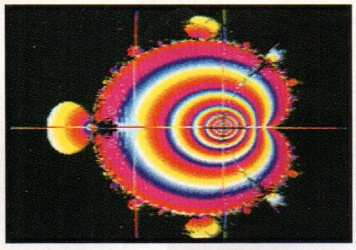
Arts and Leisure

One of the smaller sections

Fractal Universe

ALMATHERA - £29.99

Produced by Almathera Systems, and written by David Annal and Jolyon Ralph, Fractal Universe is an ideal introduction to the art and beauty of fractals. You can roam through the Art Gallery with its 400 pre-generated fractals, or you can generate your own. There is a section on the history of fractals, and you may travel on an amazing journey zooming-in to the heart of the Mandelbrot.



Education

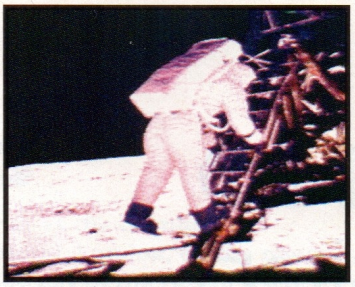
It was very hard to come to a decision as there are so many titles included in this classification. I would have liked to include Barney Bear Goes Camping which is good value for younger children.

Heroic Age of Spaceflight

NASA-THE 25TH YEAR

TROIKA - £24.99

This comes with quarter-screen video using CDXL. It celebrates twenty- five years of space exploration from the first satellites to the Gemini and Apollo missions, to the present shuttle flights and the plans for the space stations of the future. There are fifty minutes of quarter-screen video (at 10 frames per second) which can be viewed as a whole or in part. The information on the history of spaceflight is well presented. You can relive those magic moments of the moon-landing and hear again "The Eagle has landed. That's one small step for man. One giant leap for mankind." A piece of history for the younger generation.



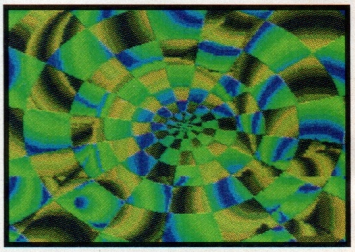
North Polar Expedition

VIRGIN £49.99

North Polar Expedition is a multi-role adventure which may be used by one person, a group of friends or the family at home, or in a classroom environment. There are five characters on this trek from Northern Canada to the North Pole, crossing appalling terrain and beset with numerous adversities. Photographs from Sir Ranulph Fiennes' Transglobe Expedition are used for illustration. The adventure starts with a quiz. Get the answers right to have a good stock of food and fuel for the journey. Calculating the needs of the team, and their position are some of the problems which would be well suited to the classroom. These are just some of the difficulties which must be resolved in order to reach the North Pole. (My disc came with the book "To the Ends of the Earth" - good reading.)

Entertainment

Another big collection of titles



Global Chaos

HEX - £29.99

This is like nothing you have ever seen on your screen before - a new dimension in the world of CD. The disc has four parts, three are music and graphics, the fourth is a game - pretty standard so far you might think. But the first part, called Global Chaos, consists of four hardcore dance tracks, composed with the aid of an intelligent music program. The graphics are totally random, a brilliant kaleidoscope of patterns and colours. Part two, Digital Love, is quite different. It is soothing and relaxing, and recommended for the relief of stress. The graphics and colours are muted and best seen in a darkened room.

It is followed by Eternal Rave - a flow of psychedelic computer graphics, continually swirling and changing, from a bank of 1000 animations, with a background sound track. It is ideally suited for a video wall or projection system at a night club or party. Truly mind-bending! The fun game, Top Banana, completes the disc. You take the cute character KT through a series of four worlds in a bid to save the planet from environmental disaster - good entertainment. →

BREAK THE SOUND BARRIER WITH

Astérix

In other countries, we need to break the sound barrier - to hear, to understand and to speak.

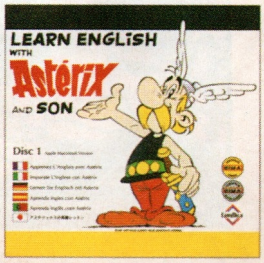
EuroTalk combines pictures, sound and laughter in an exciting story starring the world famous Asterix. You are able to tune into and hear real people speaking your target language. Using their unique* record function you may also compare your own voice with some of the 30 characters in this adventure.

At last it's possible to practise hearing, understanding and speaking a language at the touch of a button. It's fun and it works!

"Learn French with Astérix" has sold around the world and has won the British Interactive Media Awards SILVER award in the EDUCATION category and was the sole winner of the prestigious EUROPEAN award.

*Requires Voicemaster

EUROTALK



Characters of "The Adventures of Asterix the Gaul" ©Les Editions Albert René, Goscinny-Uderzo.

Product design ©EuroTalk

the top ter

Sherlock Holmes

ICOM SIMULATIONS - £44.99

A good title for a long winter's evening, the story is narrated in quarter-screen video. On the disc are three of Conan Doyle's famous mysteries - The Case of the Mummy's Curse, The Case of the Mystified Murderess and The Case of the Tin Soldier. Eight pages from The Times of 1888 (somewhat reduced in size) are included in the pack and you can also read them on screen. Search them for clues, read Sherlock Holmes' files and consult the London Directory - it's an absorbing occupation.

Trivial Pursuit

DOMARK - £49.99

Trivial Pursuit is a bumper bundle on two discs. The traditional board game is enlivened by a bird called "Russell" who acts as Master of Ceremonies. His voice is that of Chris Langham of Muppets fame.

Animations of various characters such as Napoleon Bonaparte, Will Shakespeare and Mae West pose the questions. Their voices are provided by Patrick Mower and Kate Robbins. The early release version we reviewed had a few bugs, but I am told that these have been ironed out.

Music

It's a Karaoke machine!

Karaoke Hits

MUSIC MACHINE - £19.99

With CDTV you have a Karaoke machine in your own home. Music Machine are producing a series of Karaoke Hits titles, including a Christmas Party special. Karaoke Hits brings to your TV screen the words and backing tracks for twenty popular songs. It is simple to use, but you do need to know the tune as in some cases the backing does not give you much guidance! There is restart button if the vocalist misses the start, and a fade button to allow the choice of another track. If you have an internal genlock then any video source can be displayed behind the words.

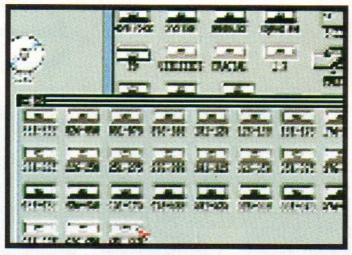
Productivity

A new category

CDPD

ALMATHERA - £19.95

This is the first of a series of CDTV titles from Almathera covering PD software. CDPD contains the first 660 Fred Fish disks of Public Domain software created for the Amiga. As well as having an applications drawer with programs such as Uedit, and Analyticalc. In addition there are 300 Protracker music modules. The disc is intended for use with the A570 or the CDTV with an external drive and keyboard. What a bargain - 600MB of PD for just £19.95!



Reference

Lots more to chose from

Fine Arts Collection

LASCELLES - £29.99

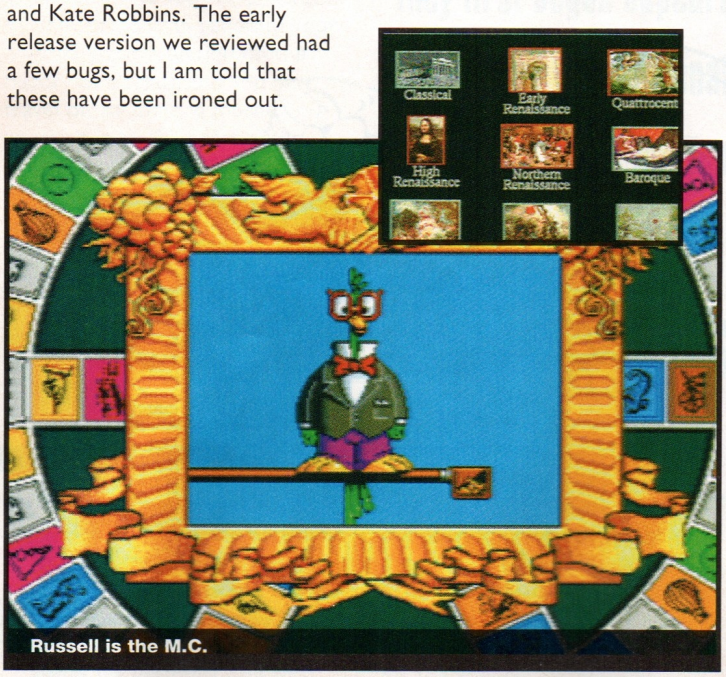
A must for the art connoisseur. For a relaxing evening just sit back and view the collection of five hundred treasures from museums all over the world. Each frame is followed by details of the work, where it is kept and the name of the artist. The background music may be selected from tranquil classical pieces ranging from Boccerini to Mozart. You can chose to see the work of a particular artist or any of nine periods, starting with Classical Greece through to the Romantics and Impressionists.

The Demo Collection

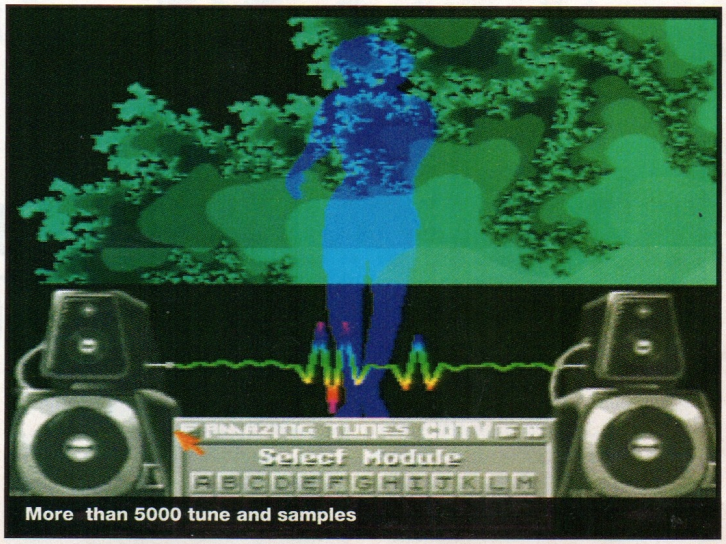
ALMATHERA - £19.99

This disc has just been released and I will be doing a full review of it in the next issue. However, The Demo Collection is such outstanding value for money that it has to be in the Top Ten. There are 1000 tunes in the Music Demo section, which may be selected from a scrolling title list. The PD Library has 4000 Protracker samples, and you may fine tune the instruments if necessary. There are 200 Demos crammed on the disc and these need to be unpacked to floppy disk to run. In addition there are games and clipart and much, much more.

That's my Top Ten but coming soon - many more exciting titles. Watch this space!



Russell is the M.C.



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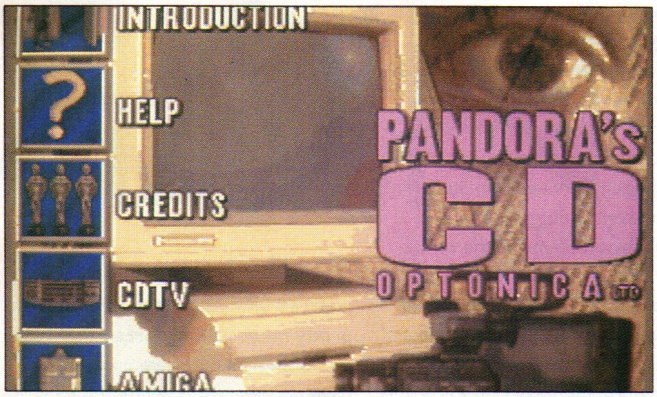

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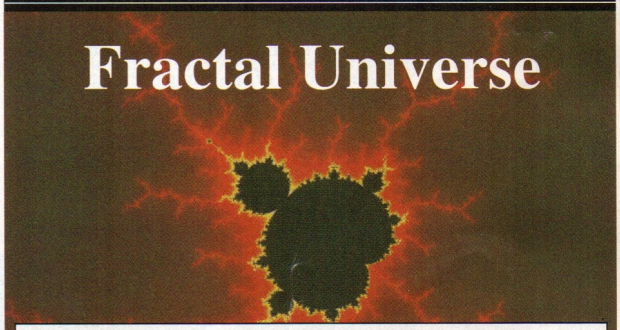

An excellent journey into the world of chaos! All you ever wanted to know about fractals plus 3 fractal generators and a gallery of over 400 pre-generated images.

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Almathera

DEFENDER of the CR

What originally brought the Amiga's supreme graphical qualities to the public's awestruck notice was a game called Defender of the Crown. Mike Nelson sits down with the brand new sequel - arriving first this time only on Amiga CD.

CDTV is such a young product that one may be forgiven for wondering about the reasoning behind releasing a second version of one of the Amiga's most famous games. The earlier version was a two floppy disk "Cinemaware" game from the old days of 1986. Graphics guru Jim Sachs has now at last been given the chance to exploit the advantages of CDTV's huge storage potential. Defender of the Crown II is the result of over a year of hard coding and drawing, but the effort is certainly worthwhile.

The scenario for the game takes place in Medieval England (Wales is included in the play area, even though we weren't on particularly good terms at the time). The country is in a turmoil because, in addition to the ERM thing collapsing, King Leopold the Nasty has abducted Richard the Lionheart and won't let him out for in time for the next crusade unless he receives a desperately expensive £20,000 in return. It's a good thing kings don't come as cheap these days or everyone would have one.

You take the part of a noble Saxon knight, dedicated to the cause of raising the cash to get Richie out of nick before he's spent two Christmases there. Otherwise his seriously wicked brother, John, will take over the Universe and strip you of all your hard earned land and stuff. With a little bit of love interest thrown in for good measure - the original Defender was famous for the scene where the heroine in gratitude gave you her all! - the scene is set for an interactive game par excellence.

Gameplay

Most of the game revolves around occupying land and accumulating tax from the inhabitants who can also be coerced into your army. You need a pretty mean fighting force as there are lots of Norman knights around who have no interest in saving the King, but simply like grabbing your territory and generally making nuisances of themselves by kidnapping fair maidens or stealing from you.

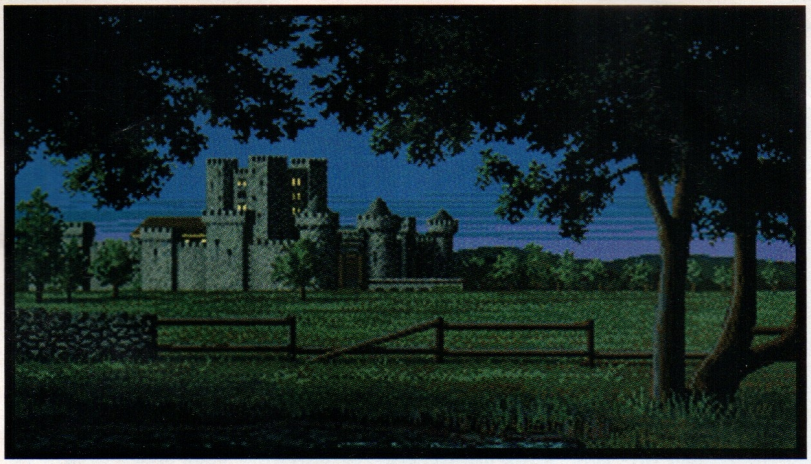
The first thing to do is decide which knight you wish to play, they all have different characteristics. For example, Wolfric the Wild is not known for his genteel nature, and is therefore better at starting wars than Cedric whose preferred modus operandi is dealing in property. Other characteristics include Leadership, Swordfighting and Jousting abilities, and these naturally help determine the course of the game.

Time is measured in terms of months and each one that goes by gives you various choices of what to do. Initially you will spend your time and money in occupying the different counties of Britain to build up an army and some money, and this is where the fun begins. If an oppos-

Jim Sachs has done a superb job in enhancing every aspect of the game while still retaining its appeal.

Most of the game revolves around occupying land and accumulating tax from the inhabitants who can also be coerced into your army

The famous jousting animations of



OWN II

CDTV Publishing

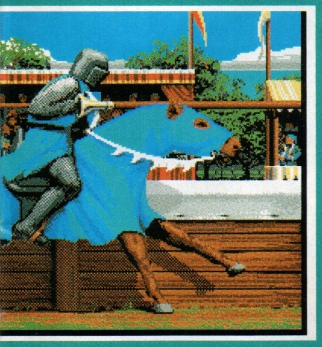
ing knight and his army are somewhere you want to be, the battle commences. This involves the computer comparing the respective armies, your own leadership qualities and the type of fighting you select. A ferocious attack can sometimes take a larger army by surprise and they are overwhelmed, but you can't use this ploy all the time as it's a bit wearing on morale

When you decide to take over someone's castle, the ultimate in two fingered gestures, you first have to go through a sequence with a catapult which destroys the walls. New to this version is firing flaming missiles into the castle to soften up the bad guys a bit before the battle. I particularly enjoyed this idea and the catty is the easiest thing to get to grips with, so doing real damage to your neighbour's keep is a piece of cake.

Eventually, one of those Normans won't be able to keep his hands off one of the aforementioned fair maidens, and you are offered the chance to try a spot of rescuing. This involves a covert operation where you raid the offending knight's castle, sword fighting his henchmen all the way in using strategic presses of the controller buttons. If you succeed, you are treated to a delightful animated sequence which ends up with... no you'll just have to play it!

Raiding, incidentally, is another way of making up the ransom money, and the idea is you steal into another castle, rather like rescuing the maiden, except the reward is the Norman loot from his treasure chest. You have to be careful, however, as you are just as likely to get raided and plundered by one of them, so leave a reasonable guard at you base castle.

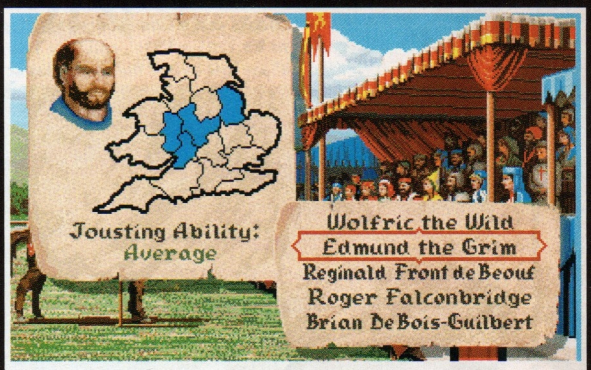
If you're desperate, there are always the tournaments which get called regularly. The famous jousting animations of the original have been enhanced but they're just as tricky as ever so don't be too tempted to bet money or land on the outcome of a battle, or you may find yourself flat on your face with a very bruised chest and no home to return to.



the original have been enhanced but they're just as tricky as ever

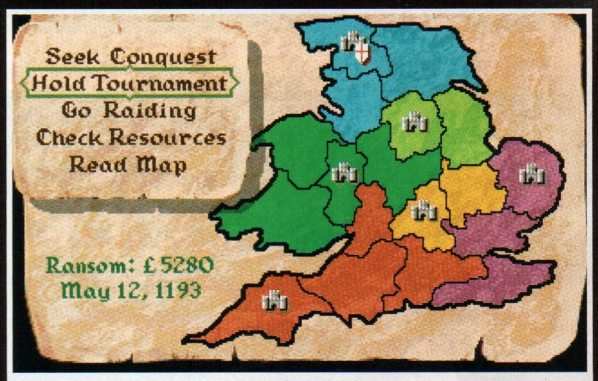
One of those Normans won't be able to keep his hands off one of the aforementioned fair maidens, and you are offered to chance for a spot of rescuing.

CONclusion



The first thing to do is decide which knight you wish to play, they all have different characteristics

Yes! It is definitely worth it! This has to be one of the best games yet out for the Amiga CDTV. Jim Sachs has done a superb job in enhancing every aspect of the game while still retaining its appeal. You can play and proceed very easily, but that winning sum of loot is surprisingly elusive to achieve, although the stunning finale is well worth the effort. The still graphics speak for themselves - Jim Sachs is one of the most famous Amiga artists and his reputation is well deserved. It is, however, impossible to do justice to the game in a paper magazine as it such a feast of animation and sound. The music was written by David Joiner, another famous Amiga aficionado, with his own MusicX software. All the samples and instruments sound crystal clear through a HiFi



Initially you will spend your time and money in occupying the different counties of Britain to build up an army and some money

and everything loads at an acceptable rate, with no annoying delays.

Defender of the Crown II is a significant release for several reasons. Firstly, it is great to see programmers like Jim Sachs spending their time on game titles, and also getting the most out of the machine. The program is not written in a complicated computer language, but using a tool called The Director II. This allows you to easily control the Amiga CDTV's powerful graphics and sound hardware. In fact, this is the first such game coded with The Director, and Jim helped iron out many of the bugs in the software, so there should be further titles forthcoming. Defender of the Crown II is a worthy addition to anyone's game collection and one which will keep you amazed and amused for many hours. Great graphics, great sound and great fun!

Price: **£34.99**

Contact: **CDTV Publishing**

93%

AMIGA CD PLATINUM!

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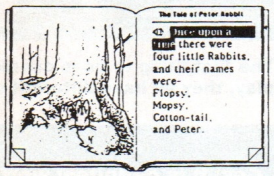
With Discis Books and a Commodore CDTV, "Scary Poems for Rotten Kids", and"The Tale of Peter Rabbit" are just two of the many classic stories listed that your child can enjoy reading on television.

The child's understanding of each story is enhanced by a variety of real voices, music and sound effects. Using the CDTV's remote control unit the reader can click on any word in the text or item in a picture to obtain a pronounciation and syllable breakdown, and an in-context explanation of every word. In addition, an optical pronounciation in Spanish is accessible for each word and picture element.



A Discis Book can be individualised for each child's specific needs. For instance, you can slow down the rate of the accompanying narration and insert variable pauses between phrases.

Discis Books are easy to use and they show a child that learning can be a fun and rewarding experience - truly an adventure in learning.

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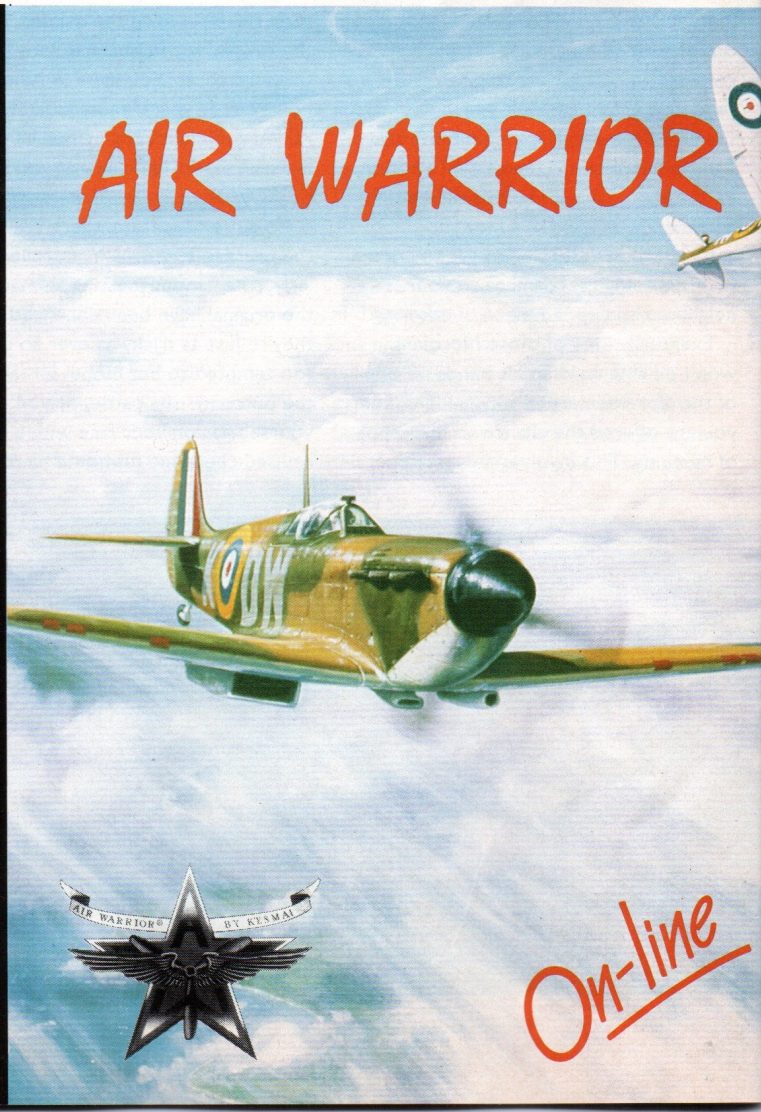
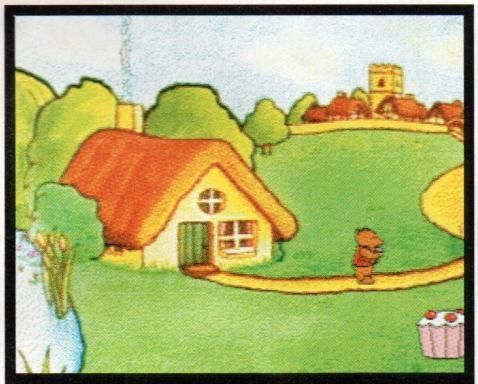


EDUCATION



The illustrations are very well created and the story has a simple but compelling theme throughout.

A Bun for Barney

MULTIMEDIA **PRICE: £34.99**

Barney Bear has been around for several years on a number of different computer formats and was one of the first educational games to appear for the Amiga. Now on Amiga CD, it has been produced as a delightful talking picture book, for 3 to 6 year olds. It will certainly both entertain and help them with their reading. The illustrations are very well created and the story has a simple but compelling theme throughout. It is about Barney Bear trying to eat his bun in peace, but to no avail with a variety of different interruptions. (Just like my lunchtime sandwich at work!)

The sound effects of the forest are very convincing and realistic, with birds singing and a narration by Tom Baker of Dr Who fame. The disc also contains a recipe for the same buns that Barney has in the story. (No remarks about one in the oven please, this is for innocent minds - of all ages!)

Though this may seem a very expensive way to acquire a recipe, the story will keep the little ones happy - and quiet - for a considerable time.

Fun School 3 (5-7 year olds)

EUROPRESS SOFTWARE **PRICE: £24.99**

Fun School too has been a big success across a wide range of computers. Probably the best seller among educational games in the UK, Fun School disks have become very popular since their release four years ago. With its appearance on Amiga CD, it is easy to see why. Fun School 3, which is aimed at 5 to 7 year olds, is packed with interesting, stimulating games and puzzles.

Japan World covers many aspects of Japanese life, from food and drink to religion, sports and the geography of the country.

There are 6 main modules that help children help in developing word and number skills, at a controlled pace. The modules are Toyshop, Collect, Time, Electricity, Funtext and Journey.

Each module is a complete game in itself and the whole program represents very good value both for entertainment and enjoyable learning. Highly recommended.

Japan World

TOP CLASS **PRICE: £49.99**

If you are interested in the culture, people or just the country of Japan, then this is the program for you. This disc is particularly suited as a teaching aid in a classroom environment but it works just as well as a personal teacher.

Japan World covers many aspects of →

In The Caddy

Our team sat down with some of the wide range of interesting titles appearing on the increasingly popular Amiga CD format. Here is their view of a sample few of the programs now available.

EDUCATION CONT

Japanese life, from food and drink to religion, sports and the geography of the country. There are also vocabulary tests, and a Japanese dictionary.

Many aspects of Japanese life are included and the disc avoids getting bogged down with too much detail but succeeds in covering all the fundamental points.

We ran through just a couple of lessons with Michelle the Publishing Director's assistant and in just a few minutes she was surprising herself with a growing understanding and even speaking with some confidence. If you are interested in Japanese culture or want to know why they have achieved world leadership in technology while we have fallen behind, well, this might be the place to start.

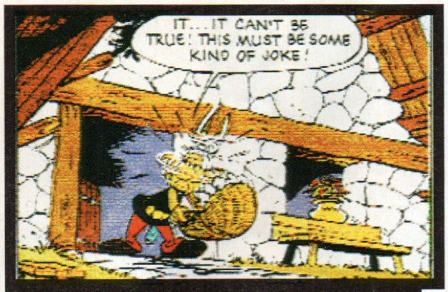
Learn French with Asterix

EURO TALK **PRICE: £34.99 PER DISC**

If you are one of those who are going to holiday in the world's most visited country, this could be the one for you.This is a two disc language learning set, featuring the popular French cartoon character, Asterix the Gaul. The story involves a baby son and has a full language module included.

The idea is to learn French easily whilst enjoying the adventures of our old pal Asterix. The pictures taken faithfully from the original comics and sound is lively and entertaining with dogs barking and convincing characters.

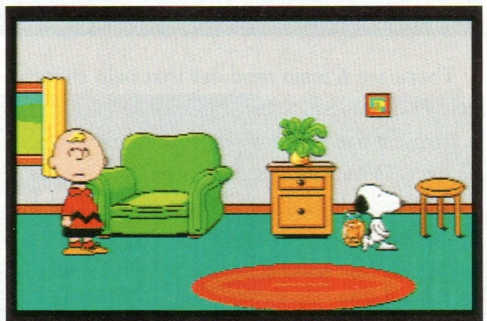
If you want to learn French, in a rather unusual and entertaining way - and one which would certainly appeal to kids - you could do worse than this set. If you are dedicated, learning a language at this price could be worthwhile investment, particularly with Microdeal's Voicemaster which has the unique abilty to record and compare your voice and pronounciation with any of the featured characters.



Even though a cartoon character Asterix has a certain style, n'est pas? And having an ancient Gaul as teacher will attract the kids.

ENTERTAINMENT

Raquel Welsh unfortunately doesn't make an appearance in this arcade style game based on the classic film.



On a quiet, lonely evening this game could prove just the comfort blanket that everyone needs. Charlie Brown rules, O.K!

Snoopy: The Case of the Missing Blanket

EDGE INTERACTIVE **PRICE: £29.99**

The ever popular Peanuts comic strip characters are brought to life in this arcade adventure, featuring Snoopy, who has to search for Linus' missing blanket, whilst solving various puzzles.

The gameplay is sometimes a bit slow and frustrating, but the cartoon characters are faithful to the original, and the whole game does have a sense of quality in its design. The soundtrack and voices are also very much in keeping with the cartoon series.

If you are a Peanuts fan (and who is'nt?) then this is an unusual game that should be in your collection for it has plenty of appeal both to children and adults - just like the witty comic strip.

Fantastic Voyage

CENTAUR SOFTWARE **PRICE: £29.99**

It was only a matter of time before this classic film was adapted to the computer world, but although the opening sequence promises so much, it really does not come up to expectations.

The game is a basic `shoot-em up', in which you control the Proteus sub which has been injected into a human body. However whilst playing the game, you would not realise that this was in a body at all. That of course, doesn't matter when you get hooked into the action.

It is perhaps less of a classic than the movie which is not unusual when films get translated to computer formats. And that's a pity of course but still unavoidable until games programmers really get a handle on the CD technology. Still this will appeal to the younger game players.

Lemmings

PSYNOSIS **£34.99**

Lemmings has been one of the greatest selling games on the Amiga, and now it is available on Amiga CD. This version is identical to its Amiga counterpart in every way. So if you have played the original then you won't be disappointed.

continued on page 17

pressing PLASTIC

One of the leading companies producing CDs on a grand scale is Nimbus, with their base in Monmouth and manufacturing plant in South Wales. They have an interesting background in producing high quality classical recordings and also converting old 78s to the modern CD format.

Nimbus Records was formed over twenty years ago as purely a record company, dedicated to perfect recording of classical music - you won't catch even the odd burst of Pink Floyd in the picturesque setting that straddles the Welsh/English Border. In 1984, the switch from conventional vinyl to the new, emerging Compact Disc format was made, and this was quite a brave move given the embryonic status of the medium which we now take for granted. Nimbus Records gave birth to NIS back in 1987, and since then this arm of the business has excelled into one of the largest, and most profitable producers of CDs in the world. So how does one get from making posh recordings of violinists to CDTV?

CD-ROM technology has actually been around for several years and Nimbus, with their recording experience were very quick off the mark to see its massive storage potential. As Emil Dudek, general manager of the CD-ROM section says "There isn't any other storage medium which even comes close in terms of its durability, cost and size". Because of their expertise, they were in close consultation with Commodore when the CDTV was barely off the drawing board, and helped sort out many of the teething problems experienced by early developers like Jim Hawkins who wrote the excellent Music Maker package.

What do they actually do at Nimbus? There are several different groups at work, and the manufacture process is the mainstay of their CD-ROM section. They do have extensive research and development facilities working on exciting projects such as 2.5 gigabyte disks (four times more than CDs), but most of these are decidedly secret and hidden away. Their software development is very interesting though, and I will describe more about this next month in our special multi-media supplement.

CD press in operation

The Production Process

A CDTV developer will usually have all the necessary files stashed on the development Amiga's hard drive, and to get these to Nimbus is the first step to overcome. Nimbus will actually take the data in a wide range of formats (even a stack of floppies, but that makes life extremely awkward) and most Amiga stuff comes "pre-formatted" into the ISO 9660 international standard.

This data can be on almost any medium from optical disk, DAT, although a SCSI hard drive is the most usual. At this stage, all the other digital data such as the audio is also introduced and the user has the option of cutting a Write Once gold disk (costing a mere 350), and so can be tested both against the original data, and in the destination machine, before the very expensive mastering stage is entered.

It is here where the process gets really serious as a kind of template master must be made. This is initially manufactured from glass so you can imagine how depressingly fragile this is, and even looking at it in a funny way will ruin its day and your bank balance . Various other negative and positive images of the glass are used to make a stamper which is capable of generating 600,000 disks, and the master is stored rather carefully in a chemically inert oil, deep inside an everything proof safe which should survive even the worst disaster imaginable. Judging by the size of the doors, they must have imagined some pretty nasty disasters!

The CD is made from plastic with an aluminium layer used to reflect back the player's laser beam, and a clear coffee-and-Coke-proof lacquer is applied to prevent the aluminum from oxidising. The binary data is stored in a series of pits which spirals from the centre. If this were to be opened out, it would measure about 3 miles, so the resolution of the system generating the spiral must be absolutely precise and thoroughly tested. Herein lies the big difference between audio CDs and CD-ROMs. Although the CD standard and its error correction allow for quite a large tolerance (like a hole 1 mm across!), the CD-ROM must be absolutely perfect as even one wrong bit in 600 megabytes could prove terminal for the computer.

Random Sampling

Nimbus pride themselves on having one of the best records of quality assurance in the world, and their automated testing has three different layers with literally hundreds of different checks. Every disk is scanned for problems which throws out an incredible 95% for further tests. Thankfully for plastic lovers

everywhere, 98% of these are fine, maybe with a speck of dust, despite the rigorous environment control, and go forward into the random sampling where every byte on the disk is checked for validity to determine finally if the quality is up to scratch.

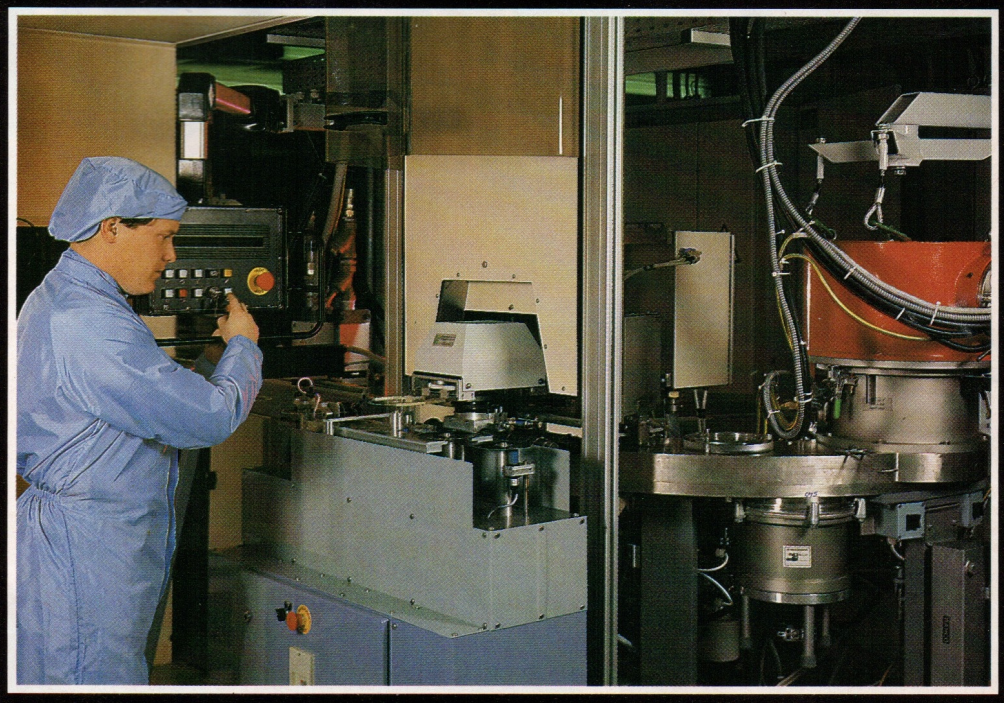
Once all the disks have been made, all that remains is to package them up into those entry-proof jewel cases and away you go.

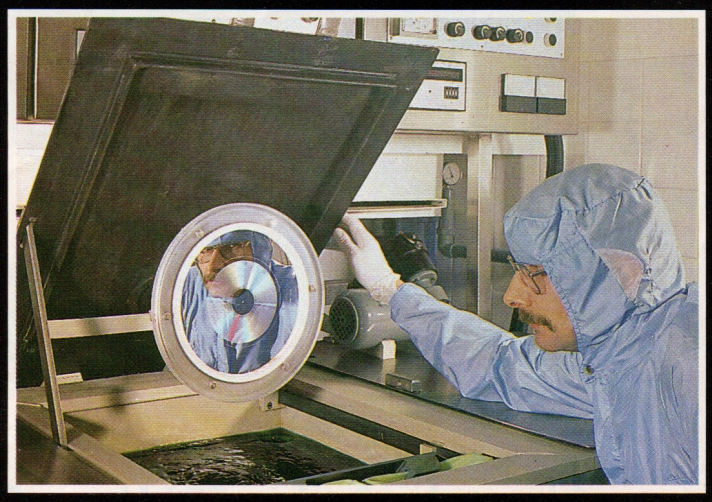
CDTV development is not an easy process, but it is one which is expanding more and more. As Emil Bunch says, programmers have only recently got to grips with the technology, and the temptation to try and translate conventional methods to CD-ROM must be resisted.

The process by which CDs are made is long and involved, but interesting to examine. Nimbus are at the frontier of this technology which although well-established, is only in its infancy and looks set to expand further the possibilities for storing information.

How do all those amazing pictures and hifi quality sound actually get onto a shiny Amiga CD disc? By what magic can a mere slice of plastic be made to hold such marvels? Dr Mike Nelson explains

g the IC

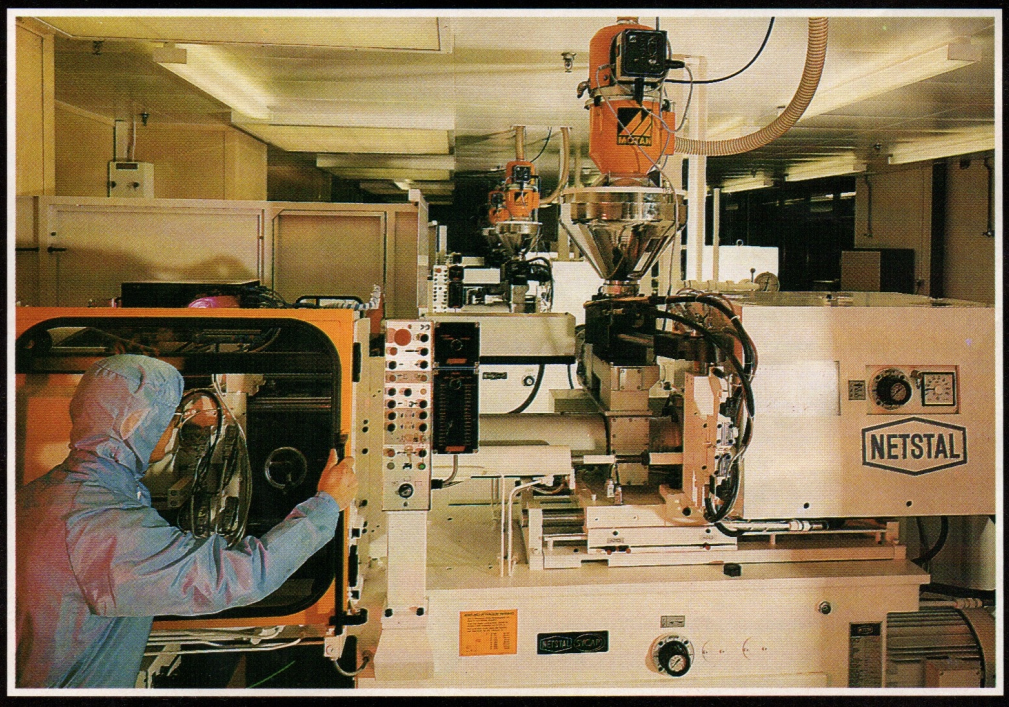




Literally hundreds of checks must be made

Left: impurities can create havoc with the discs performance

Below: as many as 95% of discs are initially rejected



The Amiga C

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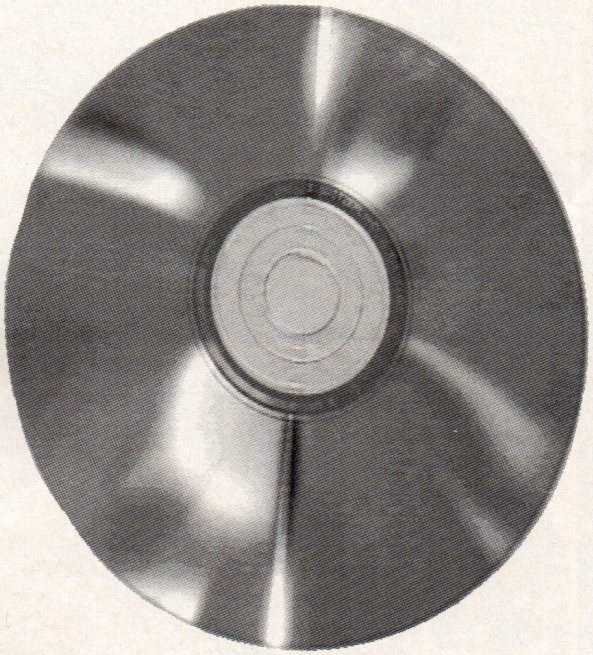

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Mike Nelson talks to Carl Sassenrath, a brilliant innovator, some say a computer software genius, who played a key role in the creation of both the Amiga and its CDTV baby brother.

The history of the Amiga as a home computer is a long and fascinating one dating back into the early 1980's. The emergence of the Amiga CDTV springs directly from this work. The Amiga has a highly sophisticated design that still provides amazing graphics and sound, even after nearly a decade that has seen so many advances in the computer world. The Amiga CDTV shares all of these characteristics with the added advantage of that CD-ROM drive for masses of storage.

Carl Sassenrath has had a close association with the Amiga since being part of the original design team. He is credited with creating at the very heart of its operating system, the "Exec" which enables the Amiga to carry out more than one task at a time. He also was responsible for CDXL, the software program that allows video movement in a window in the CDTV picture.

"Back in 1985 when we were finishing the Amiga we received one of the first CD-ROM drives from Sony - a prototype in a metal box, and it was largely ignored. It was just after CD audio came out. I actually left the company at that stage to join Apple and eventually found out about CD-I, the Philips version of CDTV... I thought it was really inadequate as there was no coprocessor or blitter chip for doing fast graphics...

I went off and did other things like the Atari Lynx and the Apple stuff, and also the Logo language for the Amiga. In 1989 I had a call from Rick Unland who worked for Commodore asking me if I was interested in CD-ROM for Amiga, and if I wanted to do some work on such a project.

At that stage its design was very loosely defined so I talked with Dale Luck and Don Gilbreth - they showed me their plan and needed someone to do the software... And it sort of evolved as I wrote more and more device drivers, adding more features like music CDs, the Bookmark and so on. We needed some help so we recruited Jim Sachs to do the startup screen and Reichart Von Wolfshield who did Battle Zone, FirePower and Roger Rabbit games. He wrote the music player part, and by now I was managing things rather than doing it all myself.

This was great as I could work from my home up in the mountains [in California] away from the city. I set up a bulletin board system so everyone could call up, find up what was happening with the project, and download the latest versions of the system software. It moved real fast - all done in one year so it was great fun to work on.

Commodore hired Nolan Bushnell who was assigned to be the figurehead of the thing even though he didn't have much to do with the dream. To get my perspective on this thing it was a chance to do the original Amiga - a consumer machine for playing games but expandable with a keyboard. CDTV is the first CD-ROM multimedia machine - we beat Philips by 8 months and they really had to rush in response to us. The first machines from them had so many wires running around, it looked like a bread board! We had a good time with that."

What about this nebulous thing called Multimedia ?

"The way I look at it is like this: think about the early televisions when they were black and white with a 4 inch screen and a huge magnifying glass to make the picture watchable. The sound was poor and the programs were poor. They did learn, by a process of evolution, how to get the best out of the system, and we're at the same stage today in multimedia. We won't recognise it in 5 years - there'll be loads of colours, full interactivity and who knows what else? The production side of things, the authoring environment, will change so that everyone can make things without regards to your background. That's really what I'd like to see"

CDTV hasn't yet taken off in a big way - why?

"It's simply a matter of getting the applications software right. Those early guys worked without full documentation to a tight schedule. The results were pretty slow and the user interfaces weren't as good as they are now. People are realising that the time taken from when you push a button to something happening is important and you cannot just do nothing while something loads. Broadcasters call it "Dead Air" and it's just not allowed as people will switch channels.

The hardware itself is OK. You don't need much of the processor time to do multimedia as it's all pictures on the screen or audio - almost all of which happens on the Amiga's DMA [direct memory access, a cunning method whereby the custom chips do the work of the processor but much faster]. The CPU [Central Processing Unit] simply sets things up and away you go...

What are American Multimedia Inc. - Carl Sassenrath's company - up to?

"I have this dream that any given CD will eventually run on any player so this is my contribution. I don't work on any other machines, just Amiga CDTV, but the code is all there. It also makes the application's code compact and easier to write - you can change things real easily...

The Amiga is really the perfect multimedia machine with all its fancy hardware for doing graphics and sound. All the programmer has to do is tell the chips what to do and away it goes. The Copper keeps the screen refreshed, you adjust the audio gear to play that and your processor just goes to sleep! A PC CPU has to constantly poll things to see what needs doing, every audio board is different - it's the same with the Mac."

Where would you like to see Amiga CDTV going ?

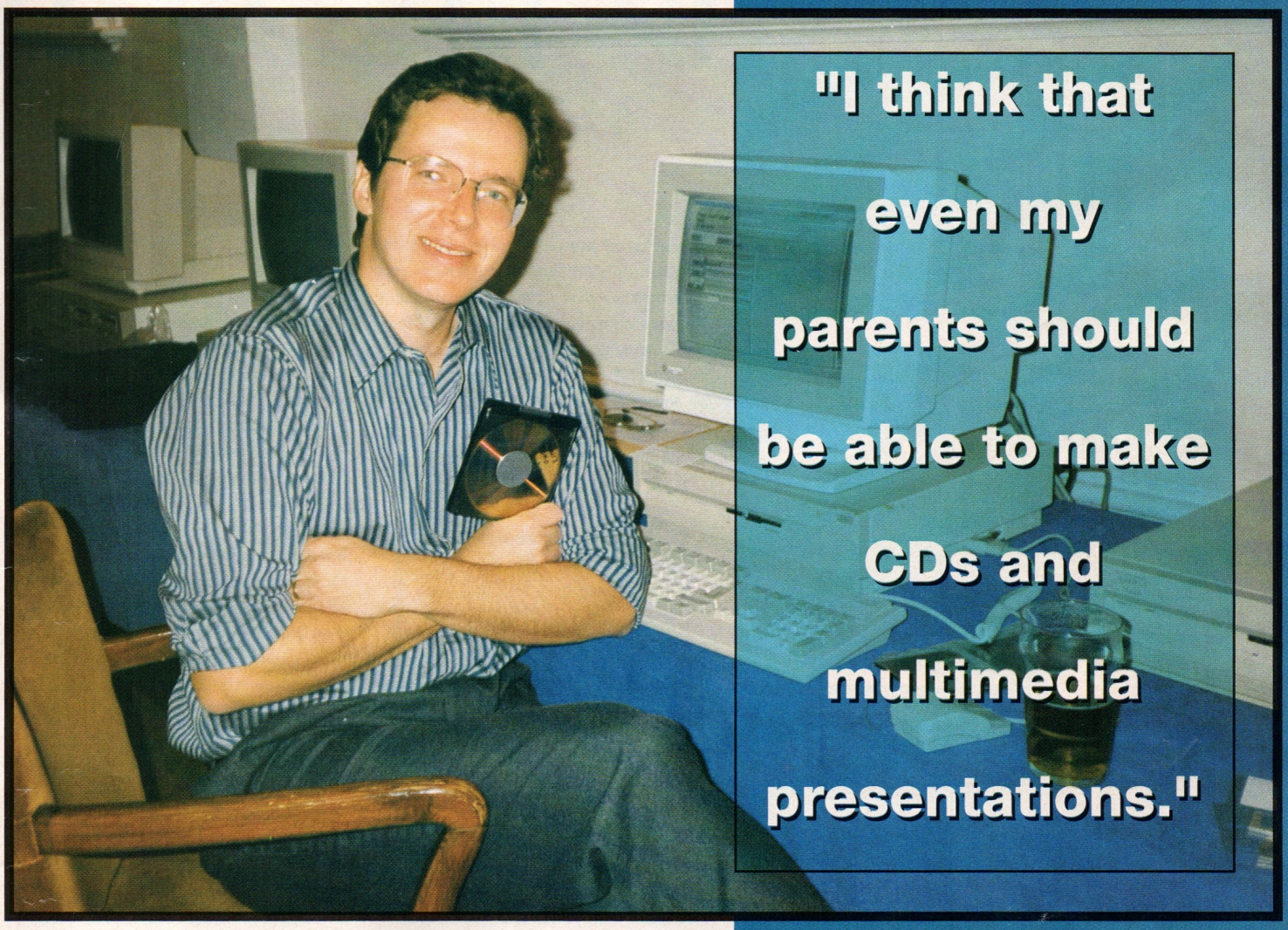
"Two directions, I think. For the professional markets we need more capability to do things like MPEG [Moving Pictures Expert Group - a standard for the compressing of video data]. And when that comes out, higher quality graphics. Then a cost cut low end machine to make it extremely inexpensive and affordable. The titles should be around £14.99 when there's enough people with players.

I think that even my parents should be able to make CDs and multimedia presentations with proper authoring software. Something like Hypercard on the Mac is needed - that had flaws, but everyone could make a stack.[A simple way of placing information in a defined order] Everyone has a story to tell and there's no reason why they can't do it with writeable or even re-writable CDs. MPEG is also going to be really important...

To encode one minute from video takes three hours at present and you can store about 70 minutes on a CD - not quite a feature film but there's a natural popcorn break half way through to change the disk! Higher

density CDs are one way to store even more. In 4-5 years, you won't be renting a video tape from a store, but a CD with a film on it - by the year 2000 it will be a $100 billion market, one of the largest created. The Amiga CDTV is the first, and still the best at doing multi-media. We're going to build on that success and take the technology further, setting new standards".

a MAN



with a DREAM

Expanding the HORI

The beauty of the CDTV, says Gary Fenton, is that it can expand to meet new demands that you make upon it by simply adding on and plugging in some easy-to-use devices.

Plugging a disk drive into your CDTV will open up the world of floppy disk software.

Disk Drive

Plugging a disk drive, which comes with the CDTV Multimedia Pack but may also be purchased separately, into your CDTV will open up the world of floppy disk software that is currently available for other Amigas such as the A500 and A600 . Not only will you be able to load a huge range of titles but you can also save your own files onto the floppy disks - 3 1/2inch - that fit into the drive. Th is means you can use paint programs, draw pictures, write text or music and create any other data of your own, and permanently store them on a disk.

Remember that a disk drive and blank disks are cheaper to buy than CDTV memory cards so they are well worth considering. In fact, it's not uncommon for Amiga owners to have two floppy drives. So you might even think of having both!

Your CDTV will look that little extra bit impressive with its stylish black keyboard!

Keyboard

The CDTV keyboard is one of the most beneficial extras you can buy. When you're not playing games or singing in a Karaoke session, you could use your CDTV for more practical tasks.

Word processing is one of the first advantages of a CDTV with a keyboard. You can make your correspondence look professional - or even write that novel you always dreamed would make you world renowned! Used in conjunction with a mouse and disk drive, you will have instant access to what must be well over 1000 software titles already created for the Amiga. The other advantage, of course, is that your CDTV will look that little extra bit impressive with its stylish black keyboard!

Mouse

The mouse is now one of the most popular ways of communicating with a computer. Certainly when using a CD in business it is almost unavoidable. The keyboard, disk drive and mouse come as standard on a multi-media CDTV pack. However, if you are thinking of buying these items separately then you should be aware that the cursor keys and A and B buttons on the remote control do the same things as a mouse. However, if the remote control feels clumsy at times then you should consider buying the mouse as well. But if you can only afford one add-on at a time, buy the mouse last.

Trackball

Trackballs are often used when close control is need for delicate design work. The Amiga CD trackball - the CD 1200 from Commodore - is a substitute for the remote control. As its name suggests, the cursor keys have been replaced with a ball which spins under the touch of your fingers. The A B buttons are much larger and the whole unit looks more professional than the original controller. Though you may find it a little difficult to get used to, there are many people who swear by trackballs as the most accurate way of interacting with a computer. Interestingly, the Amiga CD trackball has two standard joystick sockets built into it, so you can add almost any kind of joystick to your system. Until recently with the arrival of the Brickette, it was the only way you could attach a joystick to a CDTV.

ZON

Joystick

Nearly every gameplayer realises that the delicate and speedy needed are hardly possible from any other input device.

A joystick is the easiest way to play most games. Nearly all floppy disk based games require the use of a joystick and a lot of CDTV titles optionally support a joystick too. Joysticks should be and generally are tough things. They have to withstand the furious tempers of the most violent of games players! Please note that you can only add a joystick to your CDTV if you have a trackball attached to your system or the Brickette (see below). However, you have a huge choice of joysticks from many different companies. They range in price from very simple sticks at £6 or £7 up to luxury versions at £30 or £40.

Brickette

The Brickette is a new add-on which allows you to plug a joystick directly into your CDTV - without the need for a trackball. The Brickette - the Trackball was nicknamed the Brick - is a small hardware device with a cable attached that plugs into the remote control port of the CDTV. For 1/5th of the Trackball's price the Brickette is well worth buying for the many additional benefits that a joystick brings - like controlling floppy disk based games.

Advanced Video Mode (AVM)

The AVM card plugs into the CDTV's special video slot. AVM cards increase the amount of colours that can be displayed on the screen from 4096 to 4 million. Pictures and particularly moving digital video look stunning to say the least. The AVM card is Commodores ace up the sleeve when it comes to addressing the corporate market, but certainly it's one thats worth watching.

Memory

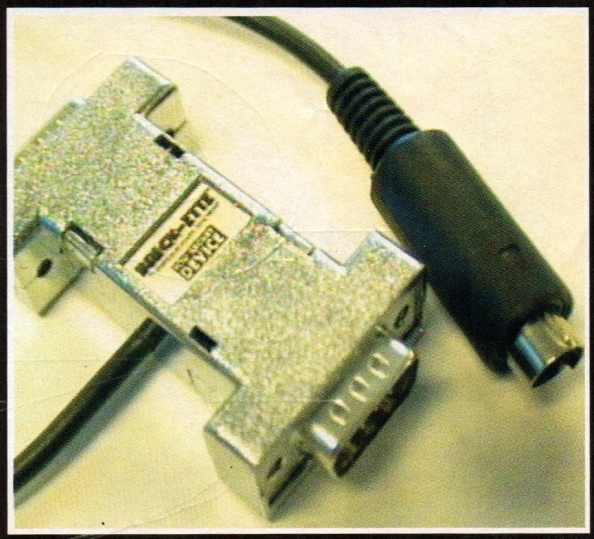
The graphics memory (chip RAM) of your CDTV can be expanded from 1 Mb to 2 Mb. This involves replacing an internal chip (called Agnus) with another one called the MegaChip. Because you will have to open up your CDTV to do this, it will invalidate the warranty on your CDTV. So you should really get your dealer to do it for you. The Blizzard Board from EVM adds 6 Mb of fast RAM to your CDTV and additionally doubles the machine's speed from 7Mhz to 15Mhz. Again, it fits inside your machine and will invalidate the warranty, if you do the fitting yourself.

Hard Drive

Hard drives are 50 to 100 times faster than floppy drives and about 6 times faster than a CD drive - though in general they don't provide anything near the amount of memory storage space. You can get both internal and external hard drives for the CDTV from 65 Mb in size. (Some can go up to and over 1000 MB - almost twice the memory size of a CD!) They are SCSI devices- a special kind of interface for small computers - and the external version plugs into the expansion slot on the rear of the CDTV. Prices start from around £349.

If the remote control feels clumsy at times then you should consider buying the mouse as well.

There are many people who swear by trackballs as the most accurate way of interacting with a computer.



The Brickette - the Trackball was nicknamed the Brick - is a small hardware device with a cable attached that plugs into the remote control port

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